

### **Remarks**

Applicants have amended Claim 1 to include the subject matter of Claim 5 and have cancelled Claim 5. Applicants have also amended Claim 4. Applicants respectfully submit no new matter has been added by the present amendment. Support for the amendment can be found generally throughout the text, specifically at page 3, line 25 through page 5, line 5.

### **Claim Rejection under 35 U.S.C. § 102(b)**

Claims 1-10 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Li et al. (U.S. Patent No. 6,060,549). Applicants respectfully traverse this ground of rejection.

Applicants submit to anticipate a claim, the cited references must teach each and every element of the claimed invention, either explicitly or inherently. Applicants submit the present invention is directed to a rubber compound comprising at least one solid optionally halogenated butyl elastomer and at least one nanoclay, wherein the nanoclay has been organically modified and wherein the optionally halogenated butyl elastomer is prepared from isobutylene and a C<sub>4</sub> to a C<sub>8</sub> conjugated diolefin and optionally a substituted vinyl aromatic monomer.

Applicants submit Li et al. does not teach each and every element of the claimed invention. Li et al. discloses rubber toughened thermoplastic resin nano composites. According to the disclosure of Li et al., the materials are prepared based on a blend of one or more thermoplastic resins. Li et al. teaches suitable resins include interpolymers of isobutylene and paramethylstyrene, wherein the methyl substituted groups present on the benzyl ring contain bromine. See Column 5, lines 42-50, Column 8, lines 63 - Column 9, line 3 and Claim 1 b). Li et al. does not disclose a rubber compound comprising an optionally halogenated butyl elastomer, wherein the butyl elastomer is prepared from isobutylene and a C<sub>4</sub> to a C<sub>8</sub> conjugated diolefin (such as isoprene) and optionally another monomer, wherein the monomer is a substituted vinyl aromatic monomer.

PO-7949

-3-

As Li et al. does not disclose the elements of the present invention, including the claimed butyl elastomer prepared from isobutylene and a C<sub>4</sub> to C<sub>6</sub> conjugated diolefin, Applicants submit the present invention is novel in view of the cited document.

Therefore, Applicants submit Li et al. fails to anticipate the present invention and accordingly Applicants request withdrawal of this ground of rejection.

**Claim Rejection under 35 U.S.C. § 102(b)**

Claims 1 and 6-10 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Shuart et al. (U.S. Patent No. 3,123,581). Applicants respectfully traverse this ground of rejection.

Applicants submit to anticipate a claim, the cited references must teach each and every element of the claimed invention, either explicitly or inherently. Applicants submit the present invention is directed to a rubber compound comprising at least one solid optionally halogenated butyl elastomer and at least one nanoclay, wherein the nanoclay has been organically modified and wherein the optionally halogenated butyl elastomer is prepared from isobutylene and a C<sub>4</sub> to a C<sub>6</sub> conjugated diolefin and optionally a substituted vinyl aromatic monomer.

Applicants submit Shuart et al. does not teach each and every element of the claimed invention. Shuart et al. discloses heat treating butyl rubber in the presence of kaolin clay. Shuart et al. does not teach or suggest a rubber composition comprising an optionally halogenated butyl elastomer and an organically modified nanoclay.

As Shuart et al. does not disclose the elements of the present invention, including the claimed organically modified nanoclay, Applicants submit the present invention is novel in view of the cited document.

**Claim Rejection under 35 U.S.C. § 102(b)**

Claims 1, 4 and 6-10 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Kresge et al. (U.S. Patent No. 5,665,183). Applicants respectfully traverse this ground of rejection.

Applicants submit to anticipate a claim, the cited references must teach each and every element of the claimed invention, either explicitly or inherently. Applicants submit the present invention is directed to a rubber compound comprising at least one solid optionally halogenated butyl elastomer and at least one nanoclay, wherein the nanoclay has been organically modified and wherein the optionally halogenated butyl elastomer is prepared from isobutylene and a C<sub>4</sub> to a C<sub>6</sub> conjugated diolefin and optionally a substituted vinyl aromatic monomer.

Applicants submit Kresge et al. does not teach each and every element of the claimed invention. Kresge et al. discloses a rubber complex for a tire inner liner that comprises a reactive rubber and a layered silicate clay. Kresge et al. does not teach or suggest a rubber composition comprising an optionally halogenated butyl elastomer and an organically modified nanoclay.

As Kresge et al. does not disclose the elements of the present invention, including the claimed modified nanoclay, Applicants submit the present invention is novel in view of the cited document.

**Claim Rejection under 35 U.S.C. § 102(e)**

Claims 1 and 6-10 stand rejected under 35 U.S.C. § 102(e) as being anticipated by WO 02/100935. Applicants respectfully traverse this ground of rejection.

Applicants submit to anticipate a claim, the cited references must teach each and every element of the claimed invention, either explicitly or inherently. Applicants submit the present invention is directed to a rubber compound comprising at least one solid

PO-7949

-5-

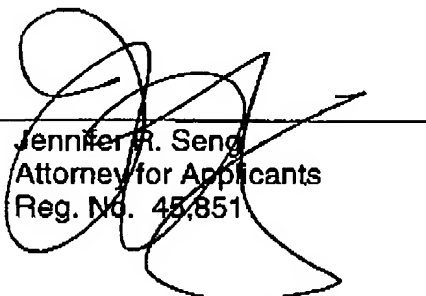
optionally halogenated butyl elastomer and at least one nanoclay, wherein the nanoclay has been organically modified and wherein the optionally halogenated butyl elastomer is prepared from isobutylene and a C<sub>4</sub> to a C<sub>6</sub> conjugated diolefin and optionally a substituted vinyl aromatic monomer.

Applicants submit WO 02/100935 does not teach each and every element of the claimed invention. WO 02/100935 discloses a blend comprising a halogenated elastomer and an exfoliated clay. WO 02/100935 does not teach or suggest a rubber composition comprising an optionally halogenated butyl elastomer and an organically modified nanoclay.

As WO 02/100935 does not disclose the elements of the present invention, including the claimed modified nanoclay, Applicants submit the present invention is novel in view of the cited document.

Respectfully submitted,

By



Jennifer R. Seng  
Attorney for Applicants  
Reg. No. 45,851

LANXESS CORPORATION  
Law & Intellectual Property Department  
111 RIDC Park West Drive  
Pittsburgh, Pennsylvania 15275-1112  
(412) 809-2233  
FACSIMILE PHONE NUMBER:  
(412) 809-1054

\\sr\S:\Law Shared\SHARED\JRS\PATENTS\7949\Response Amendment 3-30-06.doc

PO-7949

-6-